cambial activity, the relation of xylem and phloem formation, and the like. As the result of two years' studies he concludes, for this species, that the development of the phloem precedes that of the xylem; that the first increase in diameter of xylem begins a few meters below the apex; that the development of the xylem begins about a month later than the leaf formation, altho there seems, according to other investigation a diameter increase about the time the leaves appear. This, the author thinks, is due mainly to a swelling of the tissues, of the turgor type.

It is suggested that temperature of the soil, moisture of the air, the thickness and color of the bark, as well as other unknown factors may determine the place and date of diameter increase.

CELL-DIVISION IN THE SEX CELLS OF TAENIA

Harmon (J. of Morph., June, 1913) presents evidence that the division of the spermatogonial cells and the two spermatocyte divisions in Tænia are mitotic. In the ova mitosis is frequent and there is no evidence of amitosis in the oogonial division; the maturation divisions are mitotic, and mitotic divisions occur both in early and late cleavages. The author believes that there is no reason to believe that amitotic division occurs in this animal—contrary to the conclusions of earlier studies. She believes that the close contact of nuclei and other items that have been interpreted as meaning amitosis are due merely to special conditions of mitosis—as the nuclei dividing more rapidly than cytoplasm, shortness of cleavage spindle, swift reconstruction of nucleus after splitting of chromosomes, rapid growth of daughter nuclei, etc.

METAMORPHOSIS OF FILARIA LOA

Dr. Leiper (Lond. Sch. Trop. Med., Jan., 1913) telegraphs from Calabar that the Metamorphosis of *Filaria loa* has been proved to take place in the salivary glands of a fly belonging to the genus Clorysops.

DEMONSTRATION OF BROWNIAN MOVEMENT

Mr. Travis of the Queckett Club describes a satisfactory method of demonstrating striking Brownian movements. Rub a small amount of gamboge for a few moments on an ordinary microscope

slide. Place a drop or so of water where the gamboge has been rubbed. Gently push the edge of a cover glass up to the gamboge; with suitable illumination the whole field is seen in very brisk motion.

FRESH WATER DIATOMS AND THEIR PREPARATION

Groom (Eng. Mech., March, 21, 1913) invites the microscopist to the study of the Diatoms. He quotes: "Contemplation of the netted beauty of some small part of nature may bring man, as he grows older, the admiration of a vision of the whole," and thus advises: Go to a pond, collect a quantity of Pond weed. Wash this by shaking thoroughly in, say a wide-mouthed 2-pound jar nearly filled with water. Pick out all of the weeds possible, shaking to free them of the diatoms. Allow to settle for two hours and pour off all the water possible. Put the sediment into a saucer with a fair quantity of water and place it in a sunny window. Next morning take a fine piece of muslin big enough to cover the saucer; soak it, wring it out, place it over saucer; press it down so that it rests lightly on the surface of the sediment. After a time the free diatoms will make their way through the meshes of the muslin and discolor it. The diatoms are thus collected on the upper surface of the muslin free from the sandy debris. They can be mopped from the muslin into clear water with a camel's hair brush.

MOUNTING FRESH-WATER ALGAE

English Mechanic (Nov., 1912) makes the following suggestions for beginners. For unicellular algæ (diatoms, desmids, etc,). remove as much water as possible from them with a pipette, transfer to a watch glass of filtered rain water or clear water of the kind they live in. Carefully stir up the sediment, allow to settle, remove the water and the very surface of the sediment with a pipette. Repeat this process until a supply has been obtained freed from the sand and mud. Remove water and add a fluid made up of alcohol, 3 parts, water 2 parts, and glycerine 1 part. Stir the specimens well and leave it in an open watch-glass for 10 days or more until the alcohol and water are evaporated—*nearly* covering the vessel to keep out foreign dirt. Do not use heat to hasten evaporation. Mount in warm, not *hot,* glycerine jelly.